

Chapter 4 AMI BIOS Setup

THE BIOS

BIOS stands for Basic Input and Output System. It was once called ROM BIOS when it was stored in a Read-Only Memory (ROM) chip. Now manufacturers would like to store BIOS in EEPROM which means Electrically Erasable Programmable Memory. BIOS used in this series of mainboard is stored in EEPROM, and is the first program to run when you turn on your computer.

BIOS performs the following functions:

1. Initializing and testing hardware in your computer (a process called "POST", for Power On Self Test).
2. Loading and running your operating system.
3. Helping your operating system and application programs manage your PC hardware by means of a set of routines called BIOS Run-Time Service.

This Chapter includes the following topics :

4-1 About BIOS Setup

4-2 To Run BIOS Setup

4-3 About CMOS

4-4 The POST (Power On Self Test)

4-5 To Update BIOS

4-6 BIOS Setup

Attention: The BIOS Setup is subject to constant update without further notice to users. It is necessary for users themselves to update onboard BIOS with the latest BIOS version provided in our web site:
<http://www.soltek.com.tw>

4-1 About BIOS Setup

BIOS setup is an interactive BIOS program that you need to run when:

1. Changing the hardware of your system. (For example: installing a new Hard Disk etc.)
2. Modifying the behavior of your computer. (For example: changing the system time or date, or turning special features on or off etc.)
3. Enhancing your computer's behavior. (For example: speeding up performance by turning on shadowing or cache)

4-2 To Run BIOS Setup

First access BIOS setup menu by pressing < DEL > key after "POST" is complete (before OS is loaded). BIOS will then display the following message:

DEL: SETUP

4-3 About CMOS

CMOS is the memory maintained by a battery. CMOS is used to store the BIOS settings you have selected in BIOS Setup. CMOS also maintains the internal clock. Every time you turn on your computer, the BIOS Looks into CMOS for the settings you have selected and configures your computer accordingly. If the battery runs out of power, the CMOS data will be lost and POST will issue a "CMOS invalid" or "CMOS checksum invalid" message. If this happens, you have to replace the battery and check and configure the BIOS Setup for the new start.

4-4 The POST (Power On Self Test)

POST is an acronym for Power On Self Test. This program will test all things the BIOS does before the operating system is started. Each of POST routines is assigned a POST code, a unique number which is sent to I/O port 080h before the routine is executed.

4-5 To Update BIOS

- System BIOS is incorporated into a Flash memory component. Flash BIOS allows user to upgrade BIOS without the need to replace an EPROM component.
- The Upgrade Utility can be loaded on a floppy diskette for upgrading saving, and verifying the system BIOS. The Update Utility can also be run from a hard disk drive or a network drive.
- It is highly recommended that you save a copy of the original mainboard BIOS along with a Flash EPROM Programming utility (amiflash.exe) to a bootable floppy disk so that you can reinstall the BIOS when in need.
- Normally, to update BIOS is unnecessary if the system is working fine. Users should only update BIOS when incompatible problems are encountered or new features have to be added to system.
- “AMIFLASH.EXE” is a Flash EPROM Programming utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the mainboard. This program only works in ***DOS environment, the utility can not be executed in Windows 95/98, ME, NT, 2000 or XP environment.***

- **Please follow the steps below for updating the system BIOS:**

Step 1. Please visit the board maker's website, download the zip files of the latest BIOS and AMI flash utility “**amiflash.exe**” for your mainboard. After unzipping, the BIOS file format will be *.ROM, of which “*” stands for the specific BIOS file name.

Step 2. Create a bootable diskette. Then copy the BIOS file and AMI flash utility “**amiflash.exe**” into the diskette.

Step 3. Insert the diskette into drive A, boot your system from the diskette.

Step 4. Under “A “ prompt, type “ **amiflash *.ROM** “ and then press <Enter> to run BIOS update program. (*.ROM depends on your mainboard model and version code. Instead of typing “*”, you should type the specific file name for your specific mainboard). For example, you may type “amiflash MP005.rom ”.

Step 5. When the message “Flash ROM Update Completed - Pass.” appears, please restart your system.

Step 6. You will see a message “CMOS Memory Size Wrong” during booting the system. Press or <F1> to run CMOS setup utility, then reload “Load Failsafe Defaults” or “**Load Optimal Defaults**” and save this change.

4-6 BIOS SETUP --- CMOS Setup Utility

4-6.1 CMOS Setup Utility

This mainboard comes with the AMI BIOS from American Megatrends Inc. Enter the CMOS Setup Utility Main Menu by:

1. Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:

PRESS TO RUN SETUP

2. Press the key and the main program screen will appear as follows.

CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.

<ul style="list-style-type: none">▶ Standard BIOS Features▶ Advanced BIOS Features▶ Advanced Chipset Features▶ PCI/PNP Resource Management▶ Boot Configuration Setup▶ BIOS Security FeaturesSave Changes and Exit	<ul style="list-style-type: none">Discard Changes and ExitLoad Optimal DefaultsLoad Failsafe DefaultsDiscard Changes
<p>↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimize Defaults</p>	
<p>Configure Time and Date. Display System Information ...</p>	

3. Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <Esc>.
5. In the Main Menu, "Save Changes and Exit" saves your changes and reboots the system, and "Discard Changes and Exit" ignores your changes and exits the program.

6. In entering the Main option of the Main Menu, please use the functions in the Function List to configure the setting:

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

Use [Enter], [Tab] or [Shift-Tab] to select a field.

Use [+] or [-] to choose the options.

<F1>: "General Help" provides explanations of the hot-key functions available.

<F7>: "Previous values" allows user to discard previous values or not.

<F8>: "Fail-safe defaults" allows user to load Fail-safe Defaults or not. Save and Exit Setup.

<F9>: "Optimized Defaults" allows user to load Optimal Defaults or not.

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<http://www.soltek.com.tw>

4-6.2 Standard BIOS Features

“Standard BIOS Features” allows users to configure Time and Date. This menu also displays system information.

Run the Standard BIOS Features as follows:
Choose “Standard BIOS Features” from the Main Menu and press <Enter>. The following screen will appear:

CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.
Standard BIOS Features

System Overview	Help Item
AMIBIOS Version : 08.00.11 Build Date : 02/06/04 ID : 0AAAA000 Processor Type : AMD Athlon(tm) XP 1800+ Speed : 1533MHz Count : 1 System Memory Size : 256MB System Time 00 : 19 : 29 System Date Mon 02/09/2004	Use [Enter], [Tab] or [Shift-Tab] to select a field. Use [+] or [-] to configure system Time.

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

AMIBIOS/Processor/System memory

These three items only show the respective current statuses. They cannot be changed in the BIOS Setup.

System Time

The BIOS shows the time of the day in the format: hh:mm:ss. Choose the field with the Arrow keys and change the time with the Page Up/Page Down +/- keys.

System Date

The BIOS shows the date of the day in the format: mm:dd:yy :day of the Week. Choose the field with the Arrow keys and change the value with the Page Up/Page Down +/- keys.

4-6.3 Advanced BIOS Features

Advanced BIOS Features allows user to configure HDD, Floppy, Serial Port, Parallel Port etc....

Run the Advanced BIOS Features as follows:

Choose "Advanced BIOS Features" from the Main Menu and a screen with a list of options will appear:

CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.
Advanced BIOS Features

Advanced Settings	Help Item
<p>Warning: Setting wrong values in below sections may cause system to malfunction.</p> <ul style="list-style-type: none"> ▶ IDE Configuration Press Enter ▶ Floppy Configuration Press Enter ▶ SuperIO Configuration Press Enter ▶ Hardware Health Configuration Press Enter ▶ ACPI Configuration Press Enter ▶ Power Manager Configuration Press Enter ▶ USB Configuration Press Enter ▶ Clock Generator Configuration Press Enter ▶ CPU/Voltage Configuration Press Enter 	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
 F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

4-6.3.1 IDE Configuration

Choose “IDE Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for IDE Devices configuration:

IDE Configuration		Help Item
IDE Configuration		
OnBoard PCI IDE Controller	Both	
▶ Primary IDE Master	Hard Disk	
▶ Primary IDE Slave	ATAPI CDROM	
▶ Secondary IDE Master	Not Detected	
▶ Secondary IDE Slave	Not Detected	
▶ Third IDE Master	Not Detected	
▶ Fourth IDE Master	Not Detected	

OnBoard PCI IDE Controller

Allows you to enable/disable onboard PCI IDE controller.
Choices: Disabled; Primary; Secondary; Both

4-6.3.1-1 Primary/Secondary IDE Master/Slave

▶ Primary IDE Master	Hard Disk
▶ Primary IDE Slave	ATAPI CDROM
▶ Secondary IDE Master	Not Detected
▶ Secondary IDE Slave	Not Detected
▶ Third IDE Master	Not Detected
▶ Fourth IDE Master	Not Detected

Press <Enter> to show the detected information of Primary/Secondary IDE Master/slave device(s). If any IDE device is detected in any one of the above items press <Enter> to reveal the IDE information:

Primary/(Secondary) IDE Master/(Slave)

Primary/(Secondary) IDE Master/(Slave)		Help Item
Device : Hard Disk Vendor : WDC WD400BB-00DEA0 Size : 40.0GB LBA Mode : Supported Block Mode : 16Sectors PIO Mode : 4 Async DMA : MultiWord DMA-2 Ultra DMA : Ultra DMA-5 S.M.A.R.T. : Supported		
Type LBA/Large mode Block (Multi-Sector Transfer) PIO Mode DMA Mode S.M.A.R.T. 32Bit Data Transfer		Auto Auto Auto Auto 200MHz Auto Disabled

Type

To select the types of the IDE devices:

Not Installed;

Auto: Setting type automatically

CD-ROM: ATAPI (Packet Interface) CD-ROM drive

ARMD: ATAPI Removable Media Device

LBA/Large mode

To select or disable LBA/Large mode.

Block (Multi-Sector Transfer)

To select or disable Block Mode. The data transfer from and to the device occurs one sector or multiple sectors at a time.

PIO Mode

To select or disable PIO Mode.

Choices: Disabled; 1, 2, 3, 4

DMA Mode

To select DMA Mode.

Choices: Auto; SWDMA; MWDMA; UDMA

S.M.A.R.T

Allows you to enable / disable the Self Monitoring Analysis and Reporting Technology for the hard disk.

32Bit Data Transfer

To auto-select (default) or disable 32Bit Data Transfer.

4-6.3.2 Floppy Configuration

Choose “Floppy Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

Floppy Configuration

Floppy Configuration		Help Item
Floppy A	1.44 MB 3.5 in	
Floppy B	Disabled	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

Floppy A/B

Press Enter on “Floppy A/B” will let you select this field to the type(s) of floppy disk drive(s) installed in your system.

The choices are:
360KB 5.25 in.;
1.2MB, 5.25 in.;
720KB, 3.5 in.;
1.44MB, 3.5 in.;
2.88MB, 3.5 in.;
Disabled

4-6.3.3 Super IO Configuration

Choose "SuperIO Configuration" in "Advanced BIOS Features" and press <Enter>. The following sub-screen will appear for configuration:

SuperIO Configuration

Configure ITE8705 Super IO Chipset	Help Item
OnBoard Floppy Controller	Enabled
Serial Port1 Address	3F8/IRQ4
Serial Port2 Address	2F8/IRQ3
Serial Port2 Mode	Standard
OnBoard CIR Port	Disabled
Parallel Port Address	378
Parallel Port Mode	Normal
Parallel Port IRQ	IRQ7

OnBoard Floppy Controller

Allows you to enable / disable the Onboard Floppy Controller.
Choices: Enabled; Disabled

Serial Port1 Address

Allows you to set the Onboard Serial Port1 Address.
Choices: Disabled; 3F8/IRQ4; 3E8/IRQ4; 2E8/IRQ3;

Serial Port2 Address

Allows you to set the Onboard Serial Port2 Address.
Choices: Disabled; 2F8/IRQ3; 3E8/IRQ4; 2E8/IRQ3;

Serial Port 2 Mode

If Serial Port2 Address is not disabled, it allows you to set the Serial Port 2 Mode.
Choices are:

Standard;

IrDA SIR: Providing 3 items for configuration:

IR Duplex Mode:

Half Duplex; Full Duplex

IR Tx2Rx 40-Bits Delay Sel:

No 40-Bits Delay; Tx 40-Bits Delay

ASK IR: Providing 3 items for configuration:

IR Duplex Mode:

Half Duplex; Full Duplex

IR Tx2Rx 40-Bits Delay Sel:

No 40-Bits Delay; Tx 40-Bits Delay

IR Rx2Tx 40-Bits Delay Sel:

No 40-Bits Delay; Rx 40-Bits Delay

OnBoard CIR Port

Allows you to set the onboard CIR Port.
Choices: Disabled; 2E0; 3E0; 298

CIR Port IRQ

If Onboard CIR Port is not disabled, this item appears to allow you to set the onboard CIR Port IRQ for 2E0, 3E0 and 298
Choices for 2E0, 3E0 and 298:
IRQ3; IRQ4; IRQ10; IRQ11

Parallel Port Address

Allows you to configure Parallel Port Address.

Choices: Disabled; 378; 278; 3BC;

Parallel Port Mode

If Parallel Port Address is set 378/278/3BC, Parallel Port Mode appears to allow you to set the Parallel Port Mode. The choices are:

Normal;

EPP;

EPP & ECP:

ECP Mode DMA Channel:

DMA0; DMA1; DMA3

Parallel Port IRQ: IRQ5; IRQ7

If Parallel Port Address is set 378/278/3BC, Parallel Port IRQ appears to allow you to set the Parallel Port IRQ.

Choices:IRQ5; IRQ7

4-6.3.4 Hardware Health Configuration

Choose “Hardware Health Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

Hardware Health Configuration

Hardware Health Configuration	Help Item
ABS II Temperature : 43°C/111°F	
ABS II Shut Down Temperature : 85°C/185°F	
CPU Temperature : 34°C/93°F	
System Temperature : 32°C/89°F	
Fan1 Speed : 3125 RPM	
Fan2 Speed : 3169 RPM	
Fan3 Speed : 0 RPM	
Vcore : 1.500 V	
V2.5 : 2.480 V	
Vcc3 : 3.258 V	
Vcc : 5.094V	
-5V : -5.254V	
+12Vin : 12.074 V	
-12.0V : -12.048 V	
SB5V : 5.134 V	
VBAT : 3.444 V	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
 F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimize Defaults

ABS II Temperature

Shows current CPU internal temperature.

ABS II Shutdown Temperature

This feature allows you to set the shutdown temperature to the running CPU.
 Choices: Disabled; 75°C~100°C in 5°C stepping

CPU Temperature

Shows current CPU external temperature.

System temperature

Shows current system temperature.

Fan1/2/3 Speed

Displaying the current speed of CPU/Power/Chassis Fan.

VCore

Showing CPU core actual voltage value.

V2.5/Vcc3/Vcc/-5V/+12Vin/-12V/SB5V/VBAT

Showing current voltage against the V2.5/Vcc3/Vcc/-5V/+12Vin/-12V/SB5V/VBAT power supply.

4-6.3.5 ACPI Configuration

Choose “ACPI Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for ACPI configuration:

ACPI Configuration

ACPI Settings	Help Item
ACPI Aware O/S Yes	General ACPI Configuration settings
► General ACPI Configuration Press Enter	

ACPI Aware O/S

Allows you to enable ACPI Aware O/S function if your O/S supports ACPI. Windows XP, 2000, 98SE all support ACPI. Choices:

Yes: If “Yes” it allows you to configure “General ACPI”.

No: If “No”, no “General ACPI” to be configured.

► General ACPI Configuration:

Pressing < Enter > on General ACPI Configuration will reveal the following item(s).

Suspend mode

This item allows you to select the Suspend mode. You can select S3(STR) for suspending to DRAM if your system supports this mode. Or you can select S1 (POS) for Power on Suspend under ACPI mode.

Choices: S1(POS); S3(STR)(Optional); Auto

(Optional) USB Device Wakeup Function

This item allows you to enable / disable the USB device Wakeup function.

4-6.3.6 Power Manager Configuration

Choose “Power Manager Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

Power Management		
APM Configuration		Help Item
Power Management/APM	Enabled	Enable or disable APM.
Power Button mode	On/Off	
Restore on AC Power Loss	Last State	
Standby Time Out	Disabled	
Suspend Time Out	Disabled	
Advanced Resume Events Controls		
Resume On Ring	Disabled	
Resume On Lan	Disabled	
Resume On PME#	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	

Power Management/APM

To enable/ disable the Power management

Power Button Mode

To set power Button function.

Choices: On/Off; Suspend; Standby

Restore on AC/Power Loss

To set the restore state from AC/Power Loss.

Choices: Last State; Power Off ; Power On

Standby Time Out (Minute)

To set the duration of Standby Time Out.

Choices: Disabled; 1; 2; 4; 8; 10; 20; 30; 40; 50; 60

Suspend Time Out (Minute)

To set the duration of Suspend Time Out.

Choices: Disabled; 1; 2; 4; 8; 10; 20; 30; 40; 50; 60

Advanced Resume Events Controls**Resume on Ring**

Allows you to enable / disable the Resume on Ring Signal function.

An input signal on the serial Ring Indicator (RI) Line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume on Lan

Allows you to enable / disable the Resume on Lan function.

Resume on PME#

Allows you to enable / disable the Resume on PME# function.

Resume On RTC Alarm

Allows you to enable / disable the Resume On RTC Alarm function.

If enabled, the following items will appear for user's configuration.

RTC Alarm Date / Hour / Minute / Second

If resume On RTC Alarm is enabled, this field allows you to set the Alarm date Hour, Minute and second.

RTC Alarm Date (Days) : Every Day; 01 ~ 31

RTC Alarm Hour (hours): 00 ~ 23

RTC Alarm Minutes (Minutes): 00 ~ 59

RTC Alarm Second (Seconds): 00 ~ 59

4-6.3.7 USB Configuration

Choose "USB Configuration" in "Advanced BIOS Features" and press <Enter>. The following sub-screen will appear for configuration:

USB Configuration

USB Configuration	Help Item
<div>Module Version - 2.23.0-7.4</div> <div>USB Devices Enabled : None</div> <div> <div>USB 1.1 Ports configuration</div> <div>USB 2.0 Ports Enable</div> <div>Legacy USB Support</div> <div>USB 2.0 Controller Mode</div> </div> <div> <div>USB 8 Ports</div> <div>Enabled</div> <div>Enabled</div> <div>HiSpeed</div> </div>	<div>Enable USB host controllers.</div>

USB 1.1 Ports Configuration

Allows you to set the USB 1.1 port(s).

Choices: 8 USB Ports; Disabled

USB 2.0 Ports Enable

Allows you to enable / disable the USB 2.0 Ports.

Legacy USB Support

Allows you to enable / disable the Legacy USB support.

Choices: Enabled; Disabled; Auto

USB 2.0 Controller Mode

Allows you to configure the USB 2.0 Controller Mode.

Choices: FullSpeed(12Mbps); HiSpeed(480Mbps)

4-6.3.8 Clock Generator Configuration

Choose “Clock Generator Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

Clock Generator Configuration

Configure ICS ICS94230 Clock Generator		Help Item
CPU Linear Frequency	Enabled	
CPU Frequency Setting	133	
AGP/PCI Clock (Mhz)	66.67/33.33	
Spread Spectrum	Disabled	
Auto PCI Clock	Disabled	

CPU Linear Frequency

Allows you to enable / disable / auto-detect the CPU Linear Frequency setting. If enabled, the CPU Frequency Setting item will appear for user's configuration.

CPU Frequency Setting

This item allows you to set CPU Clock.

Choices: 100MHz ~200MHz in 1MHz stepping.

(100MHz~132MHz is for 100MHz CPU; 133MHz~165MHz is for 133MHz CPU; 166MHz~200MHz is for 166MHz CPU.)

AGP/PCI Clock(Mhz)

Shows the current AGP/PCI Clock

Spread Spectrum

This function will reduce the EMI (Electromagnetic Interference) in your system. If you do not have an EMI problem, leave this item disabled.

Auto PCI Clock

To enable/disable to automatically detect PCI clock.

4-6.3.9 CPU/Voltage Configuration

Choose “CPU/Voltage Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

CPU/Voltage Configuration		Help Item
CPU Voltage Control	Auto	
DIMM Voltage Control	2.5V	
VCC2.5V Voltage Control	2.5V	
AGP Voltage Control	1.5V	
CPU Configuration		
CPU Ratio Selection	Default	

CPU Voltage Control

Allows you to configure the CPU Voltage. Usually, to raise CPU voltage will raise the chance of CPU overclocking and yet risk damage of CPU.

Choices: Auto; 1.100V ~1.850V in 0.025V stepping

DIMM Voltage Control

Allows you to configure the DIMM Voltage.

Choices: 2.5V; 2.6V; 2.7V; 2.8V

VCC2.5V Voltage Control

Allows you to configure the VCC2.5V Voltage.

Choices: 2.5V; 2.6V; 2.7V; 2.8V

AGP Voltage Control

Allows you to configure the AGP Voltage.

Choices: 1.5V; 1.6V; 1.7V; 1.8V

CPU Ratio Selection

Allows you to configure the CPU Ratio if the ratio is unlocked.

4-6.4 Advanced Chipset Features

Advanced Chipset Features is used to modify the values of chipset buffers. These buffers control the system options.

Run the Advanced Chipset Features as follows:

Choose "Advanced Chipset Features" from the Main Menu and a list of option will appear:

CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.
Advanced Chipset Features

Advanced Chipset Settings	Help Item
<p>Warning: Setting wrong values in below sections may cause system to malfunction.</p> <p>► NorthBridge VIA KT880 Configuration Press Enter ► SouthBridge VIA VT8237 Configuration Press Enter</p> <p>ONBOARD Gigabit Ethernet Contr(optional) Enable</p>	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

4-6.4.1 NorthBridge Configuration

Choose “NorthBridge Configuration” in “Advanced Chipset Features” and press <Enter>. The following sub-screen will appear for configuration:

NorthBridge VIA KT880 Configuration		
Top Performance	Disable	Help Item
***** DRAM Timing *****		
DRAM Clock	By SPD	
DRAM Timing	Auto By SPD	
DRAM BUS Selection	Auto	
Primary Graphics Adapter	AGP	
VLink 8X Supported	Enabled	
AGP Mode	AGP 4X	
AGP Read Synchronization	Disabled	
AGP Fast Write	Disabled	
Graphics Aperture Size	64MB	

Top Performance
Allows you to enable/disable Top Performance function.

***** DRAM Timing *****

DRAM Clock
Allows you to set the SDRAM frequency.
Choices: By SPD; 200 MHz; 266 MHz; 333 MHz; 400 MHz

DRAM Timing
Allows you to select the DRAM Timing mode.
Choices:
Auto by SPD:BIOS will access SPD (Serial Presence Detect)automatically to configure module timing;
Turbo;
Ultra;
Manual: If DRAM Timing is set to Manual, the following 8 items will appear for user's configuration:
SDRAM CAS# Latency -- for SDRAM CAS#(Column Address Strode) Latency cycle:
1.5; 2.0; 2.5; 3.0
SDRAM Bank Interleave--allows you to enable / disable SDRAM Bank Interleave function:
Disabled; 2-way; 4-way

Precharge to Active(Trp)
2T; 3T; 4T; 5T
Active to Precharge(Tras):
6T; 7T; 8T; 9T;
Active to CMD(Trcd):
2T; 3T; 4T; 5T;
REF to ACT/REF to REF(Trfc):
12T; 13T; 14T; 15T;
ACT(0) to ACT(1) (Trrd):
2T; 3T;
DRAM Command Rate:
2T Command; 1T Command;

DRAM Bus Selection

Allows you to select DRAM Bus.
Choices: Auto; Single Channel; Dual Channel

Primary Graphics Adapter

To select the Primary Graphics Adapter.
Choices: AGP; PCI

VLink 8x Supported

Allows you to enable / disable VLink 8x mode.

AGP Mode

Allows you to select the AGP Mode on board. This item supports 4X/8X AGP Mode.

AGP Read Synchronization

Allows you to enable / disable the AGP Read Synchronization.

AGP Fast Write

Allows you to enable / disable the AGP Fast Write function.

Graphics Aperture Size

Series of options are available: 4MB; 8MB; 16MB; 32MB, 64MB, 128MB, 256MB. Memory mapped and graphics data structures can reside in a Graphics Aperture. This area is like a linear buffer. BIOS will automatically report the starting address of this buffer to the O.S.

4-6.4.2 SouthBridge Configuration

Choose “SouthBridge Configuration” in “Advanced Chipset Features” and press <Enter>. The following sub-screen will appear for configuration:

SouthBridge Configuration

South Bridge Chipset Configuration	Help Item
OnBoard SATA-IDE RAID OnBoard LAN (optional) Enabled OnBoard AC'97 Audio Enabled	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

OnBoard SATA-IDE

Allows you to configure on board SATA mode.
Choices: RAID; Disabled

OnBoard LAN

To enable / disable OnBoard LAN. (for KT880E-RL only)

OnBoard AC' 97 Audio

To enable / disable onboard AC' 97 Audio.

Onboard Gigabit Ethernet Contr

To enable / disable OnBoard Gigabit Ethernet Controller. (for KT880E-GR only)

4-6.6 Boot Configuration Setup

Boot Configuration Setup allows you to modify the system’s boot settings with the onboard devices.

Choose “Boot Configuration Setup” from the Main Menu and a screen with a list of options will appear:

CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.

Boot Configuration Setup

Boot Settings	Help Item
<div>▶ Boot Settings Configuration Press Enter</div> <div>▶ Boot Device Priority Press Enter</div> <div>▶ Hard Disk Drives Press Enter</div> <div>▶ Removable Drives Press Enter</div> <div>▶ ATAPI CDROM Drives Press Enter</div>	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

4-6.6.1 Boot Settings Configuration

Choose "Boot Settings Configuration" in "Boot Configuration Setup" and press <Enter>. The following items will appear for onfiguration:

Boot Configuration Setup

Boot Settings Configuration	Help Item
<div>Quick Boot</div> <div>AddOn ROM Display Mode</div> <div>Bootup Num-Lock</div> <div>PS/2 Mouse Support</div> <div>Enabled</div> <div>Force BIOS</div> <div>On</div> <div>Auto</div>	

Quick Boot

Allows you to enable / disable quick boot of your system. If enabled, BIOS will skip certain tests while booting. This will decrease the time needed to boot the system.

AddOn ROM Display Mode

If "Force BIOS" is chosen, the vendor's logo screen will be followed by the "AddOn ROM" initial screen (the screen showing the add-on card BIOS message). If "Keep Current" is chosen, no "Add-On ROM" screen is followed.

Bootup Num-lock

To toggle between On or Off to control the state of the NumLock keys when the system boots. If On, the numeric keypad is in numeric mode. If off, the numeric keypad is in cursor control mode.

PS/2 Mouse Support

Allows you enable/disable PS/2 Mouse support.

4-6.6.2 Boot Device Priority

Choose “Boot Device Priority” in “Boot Configuration Setup” and press <Enter>. The bootable devices installed on board will appear and are allowed to assign the Boot Priority.

Boot Device Priority		Help Item
Boot Device Priority		
1st Boot Device	1st FLOPPY DRIVE	
2nd Boot Device	PM-WDC WD400BB-00	
3rd Boot Device	DVD-ROM	

1st/2nd/3rd Boot Device

To set (by pressing <Enter>) the already-installed devices as the 1st/2nd/3rd boot device.
Choices: Disabled; Device(s) installed

4-6.6.3 Hard Disk/Removable/ATAPI CDROM Drives

Choose “Hard Disk/Removable/CD/DVD Drives” in “Boot Configuration Setup” and press <Enter>. The bootable devices installed on board will appear and are allowed to assign the Boot Priority.

Boot Configuration Setup		Help Item
Boot Settings		
► Boot Settings Configuration	Press Enter	Configure Settings during System Boot.
► Boot Device Priority	Press Enter	
► Hard Disk Drives	Press Enter	
► Removable Drives	Press Enter	
► ATAPI CDROM Drives	Press Enter	

Hard Disk/Removable/CD/DVD Drives

Press <Enter> to show the already-installed devices for setting Boot Priority.

4-6.7 Boot Security Features

Boot Security Features allows you to modify the system's boot security settings.

Choose "Boot Security Features" from the Main Menu and a screen with a list of options will appear:

CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.
Boot Security Features

Security Settings	Help Item
Supervisor Password : Not Installed User Password : Not Installed	Install or Change the password.
Change Supervisor Password	Press Enter
Change User Password	Press Enter
Clear User Password	Press Enter
Boot Sector Virus Protection	Disabled

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
 F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

4-6.7.1 Supervisor Password

To show the status of Supervisor Password. "Installed" is displayed when supervisor password is set up. Otherwise, "Not Installed" is displayed.

4-6.7.2 User Password

To show the status of User Password. "Installed" is displayed when supervisor password is set up. Otherwise, "Not Installed" is displayed.

4-6.7.3 Change Supervisor Password

This option allows you to set a new Supervisor password for the system:

1. Choose "Change Supervisor Password" in the "BIOS Security Features" and press <Enter>. Then the following message appears:

[Enter new supervisor password]

2. The first time you run this option, enter your password up to 6 characters and press <Enter>. (The screen does not display the entered characters.)
3. After you enter the password, the following message appears, prompting you to confirm the password:

[Confirm New Password]

4. Enter the same password "exactly" the same as you have just typed to confirm the password and press <Enter>.
5. The following message appears to confirm the new password setup.

[Password installed]
[OK]

6. Then press any key to continue your CMOS Setup. To save the password setup, you should press "Save Changes and Exit" and choose "OK" to exit and save setup.
7. If you enter a new password into the box, you will be using this new password after you have finished and saved this new setup. Instead, if you press <Enter> before you enter any new password into the instruction box, another message box appears, telling you that you have disabled the Supervisor Password. That means, no password is set for either entering BIOS Setup or system:

[Password uninstalled]
[OK]

User Access Level

Allows you to set four different Access Levels when Supervisor Password has been set.
Choices: Full Access; Limited; View Only; No Access

Note: "User Access Level" and "Password Check" will appear when "Supervisor Password" has been set.

4-6.7.4 Change User Password

This option allows you to set a new User password for the system:

1. Choose "Change User Password" in the "BIOS Security Features" and press <Enter>. Then the following message appears:

[Enter New Password]

2. The first time you run this option, enter your password up to 6 characters and press <Enter>. (The screen does not display the entered characters.)
3. After you enter the password, the following message appears, prompting you to confirm the password:

[Confirm New Password]

4. Enter the same password "exactly" the same as you have just typed to confirm the password and press <Enter>.
5. The following message appears to confirm the new password setup.

[Password installed]
[OK]

6. Then press any key to continue your CMOS Setup. To save the password setup, you should press "Save Changes and Exit" and choose "OK" to exit and save setup.

4-6.7.5 Clear User Password

1. To remove the current user password, choose "Clear User Password" and press <Enter>. An instruction box appears on the screen, assuring to clear User Password:

Clear User Password?
[OK] [Cancel]

2. Then choose [OK] and press <Enter>. The User Password is successfully removed.

Password Check

Allows you to set BIOS to check up password with a password prompt at BIOS Setup or whenever restarting system. This option will appear when you have set Supervisor Password or User Password.
Choices: Setup; Always

4-6.7.6 Boot Sector Virus Protection

Boot Sector Virus Protection

When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive.

You should then run an antivirus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

NOTE: Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you disable the virus warning.

4-6.8 Save Changes and Exit

Save Changes and Exit allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and press <Enter>. The following message appears:

[Saving configuration changes and exit setup?]	
[OK]	[Cancel]

Press <Enter> key to save the configuration changes and exit CMOS Setup to restart your system.

4-6.9 Discard Changes (and Exit)

Discard Changes option allows you to exit (or not exit) the Setup Utility without saving the modifications that you have specified. Highlight this option on the Main Menu and press <Enter> and the following message appears:

[Discard Changes (and exit setup?)]	
[OK]	[Cancel]

Follow the message and press <Enter> key to exit CMOS Setup and restart system.

4-6.10 Load Optimal Defaults

When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:

[Load Optimal Defaults ?]	
[OK]	[Cancel]

Press <Enter> now to load Optimal values for all the Setup options.

4-6.11 Discard Changes

Discard Changes option allows you to cancel the modifications that you have specified in the Setup Utility. Highlight this option on the Main Menu and press <Enter> and the following message appears:

[Discard Changes?]	
[OK]	[Cancel]

Follow the message and press <Enter> key to cancel the modifications that you have specified.